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EXAMINER	
SINGH, DALZID E	

ART UNIT	PAPER NUMBER
2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,057	CHO ET AL.	
	Examiner	Art Unit	
	Dalzid Singh	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *73-83,85-94,105 and 106* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *73-83,85-94,105 and 106* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 73-83, 85-94, 105 and 106 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 73 recites "...the pulse modulator having a bias and drive voltage to form optical pulses selected to achieve maximal spectral efficiency of PSK transmission, the bias and drive voltage of the pulse modulator selected to form optical pulses that mitigate non-linear of the PSK transmission line and minimize adjacent channel crosstalk, the bias and drive voltage of the pulse modulator are selected according to the characteristics of...network channel spacing, the length, the dispersion, and non-linearities of the transmission network..." On page 16, lines 14-20, the disclosure discloses "An optimal pulse shape and extinction ratio of the pulse can be obtained by controlling the DC bias and the RF driving voltage." The disclosure does not disclose selection of the bias and drive voltage of the pulse modulator to form optical pulses that mitigate non-linear of the PSK transmission line and minimize adjacent channel crosstalk, the bias and drive voltage of the pulse modulator are selected according to

the characteristics of network channel spacing, the length, the dispersion, and non-linearities of the transmission network. There is no structure or circuit diagram provided to show how the bias and drive voltage of the pulse modulator is selected to form such optical signal. Therefore, the specification fails to provide enabling disclosure.

Claim 85 recites "...optical pulse shape selected to achieve maximal spectral efficiency., mitigate transmission line non-linearities, and adjacent channel crosstalk; the optical pulse shape selected according to the characteristics of...network channel spacing, the length, the dispersion, and non-linearities of the transmission network" On page 16, lines 14-20, the disclosure discloses "An optimal pulse shape and extinction ratio of the pulse can be obtained by controlling the DC bias and the RF driving voltage." The disclosure does not disclose selection of the optical pulse shape selected to achieve maximal spectral efficiency, mitigate transmission line non-linearities, and adjacent channel crosstalk; the optical pulse shape selected according to the characteristics of...network channel spacing, the length, the dispersion, and non-linearities of the transmission network. There is no structure or circuit diagram provided to show how the bias and drive voltage of the pulse modulator is selected to form such optical shape. Therefore, the specification fails to provide enabling disclosure.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 73, 79, 85, 87-90 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (US Pub. No. 2003/0090768) in view of Walklin (US Patent No. 6,542,280).

Regarding claim 73, Liu et al disclose optical communication system for carrying optical signals, comprising:

at least one optical fiber having embedded therein an optical signal comprising return-to-zero phase shift key (PSK) optical pulses (as shown in Fig. 1, Liu et al show optical fiber (151) for carrying return-to-zero PSK optical signal; see paragraph [0005]);

at least one laser (101) to generate a cw optical signal;

at least one electro-optical data modulator (121) to encode the data for transmission in the fiber optic network; and

a WDM combiner (161) to combine multiple optical signals corresponding to multiple channels with arbitrary polarization states selected from at least one of linear, circular, or elliptical (since polarization controller (109) adjusts the polarization states of the pulse, the polarization controller could be adjusted such that the polarization states of the pulse is selected from at least one of linear, circular, or elliptical).

Liu et al disclose pulse carver (102, 104) forming RZ optical pulses (paragraph [0018]) and differ from the claimed invention in that Liu et al do not specifically disclose at least one pulse modulator to transform the cw optical signal into a pulsed optical signal; the pulse modulator configured to use electro-optics to generate optical pulses using amplitude modulation of a cw optical signal, the optical pulses having a duration

that is ½ or less that of the data bit rate. Walklin is cited to show pulse modulator to control pulse width by adjusting the drive signal of the modulator. In col. 1, lines (29-38, 54-60) and col. 3, lines (15-18, 59-60), Walklin discloses pulse width control by adjusting the drive signal. In the specification on page 26, lines 24-30, applicant disclosed several pulse widths of the pulse signal. Applicant did not disclose the criticality of having a duration that is ½ or less that of the data bit rate. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide the pulse modulator to the system of Liu et al in order to control the pulse width of so that it is ½ or less. One of ordinary skill in the art would have been motivated to do such in order to reduce channel interference.

Regarding claim 79, as shown in Fig. 1, Liu et al show that the optical fiber is a non-zero-dispersion shifted fiber (as shown in Fig. 1, Liu et al show that the fiber comprises dispersion-managed link; in paragraph [0021] Liu et al disclose that the dispersion is not fully compensated, which indicates that the dispersion is not zero).

Regarding claim 85, Liu et al disclose a method for optically transmitting data, comprising:

preparing a plurality of phase shift keyed (PSK) optical data streams, each PSK optical data stream having a different wavelength and encoding data from at least one respective data source (see Fig. 1 and paragraph [0005]);

combining the PSK optical data streams to prepare a wavelength division multiplexed (WDM) optical signal (see paragraph [0007]; since polarization controller (109) adjusts the polarization states of the pulse, the polarization controller could be

adjusted such that the polarization states of the pulse is selected from at least one of linear, circular, or elliptical); and,

transmitting the PSK optical signal along an optical fiber of an optical fiber network (as shown in Fig. 1, the PSK signals are wavelength division multiplexed and transmitted to the fiber (151)).

Liu et al disclose pulse carver (102, 104) forming RZ optical pulses (paragraph [0018]) and differ from the claimed invention in that Liu et al do not specifically disclose at least one pulse modulator to transform the cw optical signal into a pulsed optical signal; the pulse modulator configured to use electro-optics to generate optical pulses using amplitude modulation of a cw optical signal, the optical pulses having a duration that is ½ or less that of the data bit rate. Walklin is cited to show pulse modulator to control pulse width by adjusting the drive signal of the modulator. In col. 1, lines (29-38, 54-60) and col. 3, lines (15-18, 59-60), Walklin discloses pulse width control by adjusting the drive signal. In the specification on page 26, lines 24-30, applicant disclosed several pulse widths of the pulse signal. Applicant did not disclose the criticality of having a duration that is ½ or less that of the data bit rate. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide the pulse modulator to the system of Liu et al in order to control the pulse width of so that it is ½ or less. One of ordinary skill in the art would have been motivated to do such in order to reduce channel interference.

Regarding claims 88 and 106, Liu et al disclose that each PSK optical data stream is a quaternary phase shift keyed optical data stream (see paragraph [0039]; Liu

et al disclose that the data could also be combined with QPSK) and differs from the claim invention in that Liu do not disclose encoding data using a quadrature modulator comprising two Mach-Zehnder modulators driven from a respective pair of data sources. In Fig. 1C, Walklin discloses two Mach-Zehnder modulators (2 and 2') driven from a respective pair of data sources (9 and 8). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide two Mach-Zehnder modulators as taught by Walklin to the system of Liu et al. One of ordinary skill in the art would have been motivated to do such in order to provide higher transmission rate.

Regarding claim 89, as discussed above, modulating amplitude is performed after combining the PSK optical data streams (as discussed above, the modulator as taught by Walklin could be placed after WDM (161) of Liu et al).

Regarding claim 90, as shown in Fig. 1, Liu et al show plurality of PSK optical data streams comprises modulating a phase of light provided by a cw light source.

Regarding claim 105, as discussed above, Walklin shows Mach-Zehnder modulator driven from a single respective data source (see Fig. 1C).

5. Claims 74, 86 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (US Pub. No. 2003/0090768) in view of Walklin (US Patent No. 6,542,280) and further in view of Bergano et al (US Pub. No. 2004/0161245).

Regarding claims 74 and 86, as discussed above, Liu et al disclose optical transmission system transmitting RZ optical signal formed by pulse modulator with optical pulses having bell-like shapes (see Fig. 2B).

Liu et al disclose pulse carver (102, 104) forming RZ optical pulses (paragraph [0018]) and differ from the claimed invention in that Liu et al do not specifically disclose the optical pulses having a duration that is ½ or less that of the data bit rate. Walklin is cited to show pulse modulator to control pulse width by adjusting the drive signal of the modulator. In col. 1, lines (29-38, 54-60) and col. 3, lines (15-18, 59-60), Walklin discloses pulse width control by adjusting the drive signal. In the specification on page 26, lines 24-30, applicant disclosed several pulse widths of the pulse signal. Applicant did not disclose the criticality of having a duration that is ½ or less that of the data bit rate. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide the pulse modulator to the system of Liu et al in order to control the pulse width of so that it is ½ or less. One of ordinary skill in the art would have been motivated to do such in order to reduce channel interference.

The combination of Liu et al and Walklin differs from the claimed invention in that the combination does not disclose that the optical signal further comprises a plurality of non-return-to-zero (NRZ) optical pulses. However, in long haul transmission system it is well known to transmit optical signal in RZ or NRZ format. Bergano et al is cited to show such well known concept. In paragraphs [0005], [0046] and [0047] Bergano et al disclose transmission RZ or NRZ. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to transmit optical signal in

non-return-to-zero (NRZ) format. One of ordinary skill in the art would have been motivated to do such in order to reduce dispersion of optical signal. Furthermore, in Fig. 4, Bergano shows polarization modulator (413) which alters polarization states to the optical signal.

Regarding claim 87, as discussed above, the combination of Liu et al and Walklin discloses each PSK optical data stream is a binary phase shift keyed BPSK optical data stream encoding data (the data stream is in binary form such as 0's and 1's; see paragraph [0019];) and differs from the claimed invention in that the combination does not disclose phase shift keyed BPSK optical data stream encoding data using Mach-Zehnder modulator driven from a single respective data source. Bergano teaches PSK data modulator may include Mach-Zehnder. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide Mach-Zehnder modulator to modulate the data signal. One of ordinary skill in the art would have been motivated to do such in order to provide increase performance of the optical signal for long haul communication.

6. Claim 75-78 and 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (US Pub. No. 2003/0090768) in view of Walklin (US Patent No. 6,542,280) and further in view of Sarchi et al (US Patent No. 6,577,800).

Regarding claim 75, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1, comprising of dispersion managed link. Liu et al differ from the claimed invention in that

Liu et al do not specifically disclose the optical fiber has a zero dispersion wavelength of less than about 1500 nanometers. However, it is well known that there are various types of dispersion fiber which provide zero dispersion for a specific range of wavelength. Sarchi et al is cited to show such well known concept. In col. 9, lines 61-67 to col. 10, lines 1-19, Sarchi et al disclose various wavelength operating around 1550 nanometer to provide zero dispersion. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide zero dispersion for such wavelength. One of ordinary skill in the art would have been motivated to do such in order to reduce crosstalk.

Regarding claim 76, as discussed above, Sarchi et al disclose that the optical signal has a wavelength of between about 1500 nanometers and about 1625 nanometers (see col. 9, lines 61-67 to col. 10, lines 1-19).

Regarding claim 77, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1, comprising of dispersion managed link. The combination differs from the claimed invention in that the combination does not specifically disclose the dispersion of the optical fiber is at least about 2 picoseconds per nanometer per kilometer at a wavelength of the optical signal. However, it is well known that there are various types of dispersion fiber which provide dispersion compensation. Sarchi et al is cited to show such well known concept. In col. 12, lines 1-36, Sarchi et al disclose various dispersion compensation optical fibers. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide such dispersion for optical

fiber. One of ordinary skill in the art would have been motivated to do such in order to compensate for accumulated dispersion along the transmission line.

Regarding claim 78, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1 of Liu et al, comprising of dispersion managed link. The combination differs from the claimed invention in that the combination does not specifically disclose the dispersion of the optical fiber is less than about 2 picoseconds per nanometer per kilometer at a wavelength of the optical signal. However, it is well known that there are various types of dispersion fiber which provide dispersion compensation. Sarchi et al is cited to show such well known concept. In col. 12, lines 1-36, Sarchi et al disclose various dispersion of optical fiber. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide such dispersion optical fiber. One of ordinary skill in the art would have been motivated to do such in order to compensate for accumulated dispersion along the transmission line.

Regarding claim 80, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1, comprising of dispersion managed link. The combination differs from the claimed invention in that the combination does not specifically disclose the dispersion of the optical fiber is less than about 15 picoseconds per nanometer per kilometer at a wavelength of the optical signal. However, it is well known that there are various types of dispersion fiber which provide dispersion compensation. Sarchi et al is cited to show such well known concept. In col. 12, lines 1-36, Sarchi et al disclose various dispersion

optical fibers. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide such dispersion optical fiber. One of ordinary skill in the art would have been motivated to do such in order to compensate for accumulated dispersion along the transmission line.

Regarding claim 81, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1, comprising of dispersion managed link. The combination differs from the claimed invention in that the combination does not specifically disclose the dispersion of the optical fiber is less than about -15 picoseconds per nanometer per kilometer at a wavelength of the optical signal. However, it is well known that there are various types of dispersion fiber which provide dispersion compensation. Sarchi et al is cited to show such well known concept. In col. 12, lines 1-36, Sarchi et al disclose various dispersion of optical fiber. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide such dispersion optical fiber. One of ordinary skill in the art would have been motivated to do such in order to compensate for accumulated dispersion along the transmission line.

Regarding claim 82, as discussed above, the combination of Liu et al and Walklin discloses transmission system comprising of optical fiber (151), as shown in Fig. 1, comprising of dispersion managed link. The combination differs from the claimed invention in that the combination does not specifically disclose the optical fiber has a zero dispersion wavelength of less than about 1310 nanometers. However, it is well known that there are various types of dispersion fiber which provide zero dispersion for

a specific range of wavelength. Sarchi et al is cited to show such well known concept. In col. 9, lines 61-67 to col. 10, lines 1-19, Sarchi et al disclose various wavelengths operating around 1550 nanometer to provide zero dispersion. Therefore, it would have been obvious to an artisan of ordinary skill at the time the invention was made to provide zero dispersion of such wavelength. One of ordinary skill in the art would have been motivated to do such in order to reduce crosstalk.

7. Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (US Pub. No. 2003/0090768) in view of Walklin (US Patent No. 6,542,280) in view of Bergano et al (US Pub. No. 2004/0161245) and further in view of Taga et al (US Patent No. 5,872,647).

Regarding claim 83, the combination of Liu et al, Walklin and Bergano discloses transmission of RZ-PSK optical signal comprising of phase modulator to modulate optical pulses and differs form the claimed invention in that the combination does not specifically disclose an extinction ratio between adjacent pulses of the optical signal that have a relative phase difference of essentially zero is at least about 3 dB and less than about 8 dB. However, it is well known that phase modulated optical have relative phase difference between adjacent pulses. Such difference can be measured by extinction ratio. Taga et al is cited to show such well known concept. In col. 4, lines 28-45, Taga et al teach extinction ratio between optical pulses to be between 3 dB and 10dB. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time

the invention was made to provide such extinction ratio. One of ordinary skill in the art would have been motivated to do such in order to reduce interchannel crosstalk.

8. Claims 91-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (US Pub. No. 2003/0090768) in view of Walklin (US Patent No. 6,542,280) and further in view of Taga et al (US Patent No. 5,872,647).

Regarding claim 91, the combination of Liu et al and Walklin discloses transmission of RZ-PSK optical signal comprising of phase modulator to modulate optical pulses and differs form the claimed invention in that the combination does not specifically disclose an extinction ratio between adjacent pulses of the optical signal that have a relative phase difference of essentially zero is at least about 3 dB and less than about 8 dB. However, it is well known that phase modulated optical have relative phase difference between adjacent pulses. Such difference can be measured by extinction ratio. Taga et al is cited to show such well known concept. In col. 4, lines 28-45, Taga et al teach extinction ratio between optical pulses to be between 3 dB and 10dB. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide such extinction ratio. One of ordinary skill in the art would have been motivated to do such in order to reduce interchannel crosstalk.

Regarding claim 92, the combination of Liu et al, Walklin and Taga et al further disclose that extinction ratio between adjacent pulses is 10 dB (see col. 4, lines 28-45 of Taga et al) and differs form the claimed invention in that the combination of the combination does not specifically disclose relative phase difference of at least about

π/2. However, as discussed above, since the optical signal are phase modulated, therefore it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide phase difference between the optical pulses, such as π/2. One of rodinary skill in the art would have been motivated to do this in order to reduce noise or crosstalk.

Regarding claim 93, the combination of Liu et al and Walklin discloses transmission of RZ-PSK optical signal comprising of phase modulator to modulate optical pulses and differ form the claimed invention in that Liu et al do not specifically disclose an extinction ratio between adjacent pulses of the optical signal that have a relative phase difference of essentially zero is at least about 5 dB and less than about 8 dB. However, it is well known that phase modulated optical have relative phase difference between adjacent pulses. Such difference can be measured by extinction ratio. Taga et al is cited to show such well known concept. In col. 4, lines 28-45, Taga et al teach extinction ratio between optical pulses to be between 3 dB and 10dB. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide such extinction ratio. One of ordinary skill in the art would have been motivated to do such in order to reduce interchannel crosstalk.

Regarding claim 94, the combination of Liu et al, Walklin and Taga et al discloses transmission of RZ-PSK optical signal comprising of phase modulator to modulate optical pulses which has extinction and differs form the claimed invention in that Liu et al do not specifically disclose an extinction ratio between adjacent pulses of the optical signal that have relative phase difference of at least about π/2 is at least about 20 dB.

However, as discussed above, since the optical signal are phase modulated, therefore it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide phase difference between the optical pulses, such as $\pi/2$, and have extinction ratio of at least about 20 dB. One of ordinary skill in the art would have been motivated to do such in order to reduce interchannel crosstalk.

Response to Arguments

9. Applicant's arguments with respect to claims 73-73 and 85-94 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Garret et al (US Pub. No. 2003/0030882) is cited to show optical pulse generation.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
November 17, 2005

A. Bello
AGUSTIN BELLO
PRIMARY EXAMINER